

# SCIENCE & GOVERNMENT REPORT

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## IBM-Telex Case Reveals 'Massive' Espionage

A rare glimpse into the intrigue and shady dealings that dominate the high-technology computer industry was provided by the recent antitrust suit between International Business Machines Corp., the giant of the industry, and Telex Corp., a relatively small Tulsa-based manufacturer of peripheral devices that plug into IBM computers.

The main outlines of the decision handed down by Federal Judge A. Sherman Christensen on September 17 have been well publicized. The judge found that IBM achieved an unlawful monopoly over the market for peripheral products—such items as magnetic tape units, magnetic disc storage devices, main memories, printers, and communication controllers—and that IBM sought to destroy its competitors in this market through "predatory pricing actions." He ordered IBM to pay Telex \$352.5 million in triple damages and enjoined IBM from various marketing, pricing, and manufacturing practices.

The decision—which is being appealed by IBM—has been called one of the most important in the history of civil antitrust litigation. It may encourage other companies to file suit against IBM, and it is expected to have an energizing effect on the Justice De-

partment's thus far lethargic prosecution of an antitrust suit that charges IBM with monopolizing the entire computer industry, not just the peripherals market.

The implications of the decision—the possibility that one of America's most powerful corporations may be chopped down to humbler status and that smaller high-technology companies may be able to invade the computer field—have distracted attention from the evidence upon which the decision was based. Yet some of the most interesting parts of

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## In Brief

The Nixon Administration's plan to spend \$10 billion on energy research over five years (a "me too" response to Senator Jackson's plan to spend \$20 billion over ten years) may be proposing too much too soon. The Center for Policy Alternatives at MIT, headed by J. Herbert Hollomon, former assistant secretary of commerce for science and technology, is putting the finishing touches on a study of energy R&D for the Ford Foundation's Energy Policy Project. Insiders say the study will conclude, among other things, that the nation's scientific enterprise can't usefully absorb \$10 billion that fast.

Stung by criticism from his former allies in the environmental movement, Sen. Mike Gravel (D-Alaska) has been trying to explain that there is no "inconsistency" between his long-standing opposition to nuclear power plants and his recent championing of the trans-Alaska oil pipeline. As Gravel now explains it, he opposes nuclear power not simply for environmental reasons, but also because it has "severe liabilities in terms of morality, human health, economic stability, national security, atom bomb proliferation, and civil liberties." In contrast, he says, the pipeline has no such liabilities. More to the point, the pipeline will be beneficial in terms of "jobs" and "personal income" for Gravel's constituents, a frank admission that pork barrel policies take precedence when an environmental crusader is forced to deal with the interests back home.

Latest scheme for peacetime use of nuclear explosives: Thai and Japanese officials are considering the use of underground nuclear blasts to dig a canal across the Kra Isthmus in southern Thailand. The US has shelved the idea of using a similar approach in Panama, but the technology seems determined to find an application.

### SST: International Deal

#### *Raises Hope for US Revival*

Discussions of American participation in a multi-national program to build a successor to the Anglo-French supersonic Concorde have gone a good deal further than recently published reports indicate.

The proposition was advanced to President Nixon last June by French President Pompidou when they met in Iceland, and since then, according to European sources, McDonnell Douglas has shown strong interest. What makes the deal potentially sweet in the Administration's view is that the Concorde makers have a dozen years of experience behind them, and foreign cost-sharing would be a useful counter against the congressional anti-SST lobby.

An additional incentive for US participation is the depressed state of the aircraft industry. For the Europeans, a US role is deemed essential because of the vast scale of the project and the expectation that American markets can be more easily penetrated if there is American participation in the manufacture.

## IBM's Campaign to Destroy its Competition

One of the most surprising findings to emerge from the IBM-Telex suit is that IBM, which projects an image of the highest technical competence, actually lags behind competitors in crucial areas.

In the course of the trial, IBM had to disgorge some 40,000 pages of internal documents, including one document which compared IBM's System/360 computer with its competitors. This document reportedly concluded that three IBM models were "deficient" alongside those of their competitors, four were "equal," and only one was "superior."

Judge Christensen's decision provides additional evidence of IBM deficiencies. It notes that the world's fastest central processing unit for computers is marketed by Texas Instruments, not by IBM. And it notes that, by 1970, some of the plug compatible peripheral devices in the tape and disk areas offered by Telex and other manufacturers were "functionally superior to, and were regarded by IBM as superior to, their corresponding IBM products."

Faced with competition from superior peripheral devices, IBM set up a series of internal task forces to develop a strategy for counterattack. Its initial response amounted to price cutting disguised as technological improvement. In September 1970, IBM announced a "new" disk file (code name Mallard) which was essentially an old model with a new name, a lower price, and highly complicated interfacing mechanisms that would make it difficult for rival "plug compatible" devices to be plugged in.

In swift succession, IBM then announced "new" devices that did not even pretend to represent technological improvement but were simply a means for making price cuts below existing models, and it offered customers long-term leasing plans that reduced the traditional rental rate but locked custo-

mers in for long periods. Meanwhile, IBM raised its prices on central processing units and memories that were not threatened by competition. In a few instances, IBM also made technological improvements designed to keep the corporation a few steps ahead of its rivals.

The goal of these maneuvers was not just to surpass the competition, but to threaten the "viability" (Judge Christensen's word) of such companies as Telex and Memorex, the two leading plug compatible competitors of IBM. The price-cutting approach was described as "gas war" in IBM's internal jargon, and one IBM flip chart suggested that IBM's various moves would ensure that a mythical competitor would become a "Dying Company." The tactics were highly successful. Although neither Telex nor Memorex is yet dead, both were hurting. Telex, for example, suffered a \$13.4 million loss in its last fiscal year.

Judge Christensen concluded that, while IBM had gained its leadership position in the industry largely through "skill, industry and foresight," the company's problems in the peripheral products market were caused, to some extent, by "its failure, as IBM itself recognized, to develop new technology and superior performing products as rapidly and effectively as it had hoped." The judge said IBM had maintained its monopoly position in the peripheral products market since 1969 by seeking to "constrain or destroy" its smaller rivals "by predatory pricing actions and by market strategy bearing no relationship to technological skill, industry, appropriate foresight or customer benefit." Although IBM's conduct was "sophisticated, refined, highly organized, and methodically processed," the judge said, it was "hardly less acceptable than the naked aggressions of yesterday's industrial powers."

### ESPIONAGE (Continued from page 1.)

Judge Christensen's 222-page decision concern the tactics used by both sides in a savage struggle to gain competitive advantage.

The picture that emerges does little credit to either side. IBM, a world-wide symbol of technological proficiency, turns out not to be so technologically supreme after all. Faced with competition from products that even IBM acknowledged were better than its own, the huge computer-maker decided to beat back its competitors, not by producing technically superior products, but by using economic muscle to drive the competitors toward financial distress. (See "IBM's Effort," page 2).

Meanwhile, Telex, which is often romanticized as a technological David battling the computer Goliath, turns out not to have had an original technical idea worth mentioning. It lived, parasite-like, off IBM's ideas, which it obtained by paying large sums of money to key IBM personnel to defect, bringing with them, of course, the vital trade secrets that they had

pledged never to reveal. Indeed, in a subordinate part of the same decision, Judge Christensen ordered Telex to pay IBM \$21.9 million for misappropriating IBM's trade secrets, and he enjoined Telex from continuing its "improper behavior." (Telex, like IBM, plans to appeal that part of the decision which went against it.)

Telex was one of many small firms that successfully invaded the computer market in the late 1960's by manufacturing or marketing "plug compatible" peripheral products that could be attached to basic IBM systems as a substitute for IBM's own peripheral devices. This was an important market, since peripheral devices account for 50 to 75 per cent of the price of a data processing system. In 1970, IBM sold \$1.1 billion worth of plug compatible peripheral products, while all other manufacturers of IBM plug compatible peripheral products received slightly more than \$100 million in revenues.

Telex's basic strategy, as described by Judge Christensen:

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## Polaris on Ice: SST-Killer Garwin Floats a Plan

A scheme to refrigerate retired US Polaris missiles and use them as a source of spares and parts for Britain's missile fleet has been proposed by IBM's Richard L. Garwin. The idea, which he claims is novel, is not inspired by any charitable instinct, but rather stems from the strong desire of the arms control movement, of which Garwin is a leading member, to hold down the spread of missile technology.

Garwin's proposal, which is included in a report on Britain's nuclear weapon program just published by a House of Commons subcommittee on defense affairs, comes at a time when Britain is debating whether to follow the costly American process of replacing the Polaris A-3 missiles with the higher performance Poseidon missiles.

Courtesy dictates that American friends refrain from questioning whether there is any sense at all in Britain maintaining a submarine missile force, which numbers all of four vessels, no more than two of which are ever at sea at one time. The next best choice, however, is the sort of bargain basement inducement suggested by Garwin, who stated in his memo to the subcommittee:

### *HEW Reluctantly Creates New Health Agency*

The Department of Health, Education, and Welfare has established a new agency to deal with alcohol abuse, drug abuse and mental health—even though a departmental task force concluded that it would be better to split the activities among existing health agencies.

The reason for establishing the new agency seems to have been primarily political. Both the task force and the HEW leadership concluded that lobbying pressures from special interest groups and their Congressional backers would make it virtually mandatory to grant the alcohol, drug and mental health forces greater visibility.

The new agency—called the Alcohol, Drug Abuse, and Mental Health Administration—will consist of three institutes: the existing National Institute of Mental Health (NIMH), which was temporarily lodged in NIH after a previous reorganization of health agencies last May; the existing National Institute on Alcohol Abuse and Alcoholism, which has been a dissatisfied subordinate part of NIMH; and a new National Institute of Drug Abuse.

Several options for organizing drug, alcohol and mental health programs were considered by an HEW task force headed by Elmer A. Gardner, an FDA psychiatrist. The task force "unanimously" concluded that the "most desirable eventual organizational structure" would be to integrate these activities into the existing health system along functional lines. Under this scheme, research activities in all three areas would lodge in NIH; training activities in all three areas would be placed in the department's newly established Health Resources Ad-

"First it is important to note that the US has recently replaced hundreds of perfectly good Polaris missiles by Poseidon. These missiles have not been destroyed and can be used as spares or as a source of parts to support the British fleet. Furthermore, it is highly probable that the longevity of these Polaris missiles can be very much extended by storage at somewhat reduced temperature, say at 40 F, in a large refrigerator warehouse such as is used for food. Under these circumstances, the question of a replacement for the Polaris missile need not be addressed at this time."

An accompanying memo to the subcommittee by Donald G. Brennan of the Hudson Institute skirts close to telling the British that the \$85 million a year that they're spending on their Polaris makes little strategic sense. In effect, Brennan advised the subcommittee that if Britain is closely linked to the US, it comes under American nuclear protection, and if it isn't closely linked, it is in no greater peril than non-nuclear Sweden.

The real message, of course, is that Britain should stop wasting its scarce funds on a virtually meaningless nuclear force, and put the whole thing on ice.

### *HEW Reluctantly Creates New Health Agency*

ministration; and service activities in the three areas would be placed in the Health Services Administration.

But the task force reluctantly concluded that "this option was felt to be politically infeasible at the present time." It also felt that "the leadership and visibility currently needed by mental health, drugs and alcohol would be severely compromised" if those activities were submerged in existing agencies.

As it turned out, the task force was unable to agree on which of two other options would be most desirable, but Charles C. Edwards, assistant secretary for health, recommended the configuration that was ultimately announced on September 17. He reasoned that this option "would receive the most widespread acceptance (and the least resistance) from the variety of concerned organizations and professional leaders."

Rep. Paul Rogers (D-Fla.), head of the House health subcommittee, has introduced legislation to establish an agency that would be almost identical to that announced by HEW. Some of the interest groups are backing Rogers' legislation on the theory that it would be harder to disband the new agency at some future date if the agency were created by law rather than by administrative action.

A head for the new agency has not yet been named. The new drug institute will be headed by Robert DuPont, director of the White House Special Action Office on Drug Abuse. Bertram Brown will continue to lead NIMH, and Morris Chafetz will continue as director of the alcohol institute.

## NAS on Sakharov: Science's Closet Liberals Emerge

After astonishment has subsided, the emergence of the National Academy of Sciences (NAS) as a champion of the civil liberties of Andrei Sakharov, the dissident Soviet physicist (SGR Vol. III, No. 16), merits the approval of all civil libertarians. But veteran observers of the traditionally disengaged high temple of science may be pardoned for puzzlement over its choice for this rare denunciation of injustice.

Consider, for example, that the torture-prone Brazilian regime, which easily matches the Soviets

in repression of academics, including scientists, not only has not been threatened with a cutoff of the Academy's goodwill, but has been the beneficiary of an Academy-run program to develop modern chemistry in that country.

SGR once asked NAS Foreign Secretary Harrison Brown, a prime mover in the Academy's Sakharov protest, how he reconciles the Brazilian program with his own liberal sentiments. He replied to the effect that if the Academy concerned itself with the politics of foreign nations, international scientific cooperation could easily be crippled. The Academy some years ago did seek to assist Brazilian academic refugees in finding jobs, but never did it venture to shake its fist at the government that caused them to flee.

Over the past decade, South Vietnam's numerous outrages against its academics and other intellectuals failed to stir any audible protest from the Academy; nor, for that matter, did it in any way associate itself with the many members of the scientific community who were in the vanguard of opposition to the war. On several occasions, attempts to hold debates about the Academy's involvement in classified Defense Department research were deftly shunted aside by parliamentary maneuvers of the Academy leadership. NAS has said nothing about the Soviet decimation of the Czech scientific community, and continues to have many friends in such lands of liberty as S. Korea and Taiwan.

Why, then, Sakharov as the stimulus for the Academy liberals to emerge from the closet? The answer would appear to be that the brotherhood of science is strong, but science being the elitist business that it is, the brotherhood is especially strong when superstars are involved. Sakharov, whose place in nuclear history is said to approximate that of our Edward Teller, is precisely the kind of faraway symbol of oppression that ignites the fervor of Academy statesmen who easily conjure up rationales for aloofness concerning similar problems close to home, or lesser figures abroad.

The situation has many ironies, not the least of which is the Academy's warning to the Soviets that harrassment of Sakharov might give the NAS second thoughts about taking part in the current expansion of US-USSR scientific and technical cooperation. After that expansion was negotiated by officials of the Nixon administration and then placed under the direction of a newly established US-USSR Scientific and Technical Commission, Academy President Philip Handler went before a congressional committee and pouted that no role had been assigned to his organization.

The lament was a valid one, deriving from the fact that the pre-Watergate White House inner circle tended to regard the Academy as something between a nuisance and joke, but the then-White House Science Adviser, Edward E. David, Jr., in his

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### Britain's Scientists Split on Sakharov

Prominent members of Britain's scientific community have publicly clashed over the question of how to respond to the Sakharov affair and the closely related issue of emigration rights for Jewish scientists in the Soviet Union.

Last month, 109 Fellows of the Royal Society, including 10 Nobel laureates, endorsed a petition by Nobel chemist Derek Barton protesting the crackdown on dissident Soviet scientists. Addressed to Prime Minister Heath, the petition stated that "When a scientist in Russia asks for his papers so that he can emigrate—not an illegal thing to do—he is promptly dismissed from his position and forced to take purely menial work."

A spokesman for the group said the petition was intended to draw attention to the harassment of Sakharov, but that "It also applies to the hundreds of less-known scientists who happen to have fallen foul of the Soviet government in some way."

However, the Royal Society itself, which is the equivalent of the NAS, has chosen to keep itself aloof from the controversy, explaining through a spokesman that "The Society regards the taking of corporate action would be counter-productive. We want to allow interchange to take place, both of people and opinion."

The Society's attitude drew a blast from one of Britain's top cancer research administrators, Alexander Haddow, retired director of the Chester Beatty Research Institute, who, in protest over Soviet treatment of Sakharov, has submitted his resignation as an honorary member of the Soviet Academy.

Responding to a statement by former Society President Lord Blackett that reliable information is lacking on the Sakharov affair—and, therefore, a protest may be unwise—Haddow said, "I don't approve of that attitude at all. And I've no use for the Royal Society either—they just try to avoid the issue. They have a very, very poor record."

## Public Interest Scientists May Form Own Academy

Long-simmering dissatisfaction with the advisory work of the National Academy of Sciences (NAS), the government's "official" source of outside scientific advice, has led public interest groups to consider establishing a new "Academy of Unrepresented Interests" or "Academy of Public Interest."

The possible advantages and disadvantages of forming such an academy will be discussed by leaders of citizen and consumer groups at a meeting on October 8 at the Brookings Institution in Washington, D.C., with Ralph Nader scheduled to deliver opening remarks on "the significance of the scientific expert on public policy making."

The prime mover in organizing the conference is Samuel S. Epstein, professor of environmental health and human ecology at Case Western Reserve University, a frequent critic of alleged bias on NAS committees that advise federal agencies. Epstein has publicly charged that NAS committees which advise the Food and Drug Administration on food safety have been dominated by industrial interests, and that the "closed system of committee appointments" at the NAS results in committees which fail to include the full range of contrasting viewpoints on an issue.

In a letter inviting some 70 scientists and public

### SAKHAROV (Continued from page 4.)

efforts to hold things together between the Nixon crew and the scientific community, subsequently took some pains to cut the Academy in on the newly planned activities. The fact of the matter is, however, that there is little symmetry between the academies of the two nations: The Soviet version is actually the holding company for operating research agencies, while the NAS is an institutional oddity that is close to, but in the final analysis, independent of government. It is a convenient device for administering cooperative arrangements, but is far from indispensable and many major cooperative programs get along without it. In Soviet eyes, Handler's threat is not likely to amount to much when compared to HEW Secretary Caspar W. Weinberger's denunciation of the threat and praise of Soviet-American cooperation as of "enormous benefit to mankind."

Any prognosis of the Sakharov affair is clouded by his unique position in Soviet society and Western lack of knowledge as to what's going on there. As the much-honored "father" of the Soviet H-bomb in a nation that deifies scientific and technical achievement, he is an unlikely candidate for being packed off to a jail or mental hospital. Considering the free-handed manner that Soviet police normally employ against dissidents, he's been carrying on as though there is a court injunction against interfering with his rights. He routinely telephones his complaints to colleagues outside the USSR and has the press into his home for give-and-take press conferences. The deputy state prosecutor has warned him that this

interest representatives to attend the conference, Epstein laments the "lack of responsiveness on the part of scientific and technological professions to act as a resource for public interest, citizen and consumer groups." He attributes the problem to "a wide variety of reasons and constraints, including dependence of scientists and technologists on industrial and agency funding, unwillingness of 'pure scientists' to involve themselves in societal issues, and the authoritarian structure of many professions, particularly medicine and engineering."

As a result of being frozen out of the advisory process, he says, "public interest groups usually function on a reactive or post hoc basis, either after decisions have been made, or at a late stage in the decision-making process on any one problem."

The conference will explore whether a new Academy is needed to serve as a "balancing mechanism where sometimes adversarial positions could be developed." The tab for the meeting will be picked up by the Monsour Medical Foundation, of Jeannette, Pa., which sponsored a conference in June at which scientists and public interest leaders discussed "multi-component mixtures and their application to health related problems."

can't go on, to which Sakharov responded by writing up their conversation and mailing it to the West for publication.

To outsiders, it may seem doubtful that the Soviets can long tolerate Sakharov's demand that the US insist on political liberalization within the USSR as the price of expanded trade and cooperation. But it's probably simpler for the Soviets to let him rant on than to shut him up.

As for reports that he has been offered a position at Princeton, there is no certainty that he wants to leave his homeland or that the government would permit him to if he did. An earlier dissident, Zhores Medvedev, long agitated to go abroad for scientific conferences, and then, on very short notice, was granted an exit visa. Once out of the country, however, the Soviet government deprived him of citizenship, and now he's working in London and is said to be a very unhappy man. But even assuming that Sakharov wants out, there's the troublesome fact that he's daddy of the H-bomb. His knowledge of military matters is no doubt dated and of little value, but if the clods who run security affairs for the Soviets bear any resemblance to ours, it would take some doing to persuade them of that.—DSG.

**ESPIONAGE** (Continued from page 2.)

Christensen (who seems to have been praised by almost everyone for his understanding of the industry) was to subordinate its own innovation and simply follow IBM product leadership "by copying as closely as possible the IBM design." Telex was thus able to avoid the systems development and marketing costs incurred by IBM, and it was able to rely on IBM systems software for use with Telex devices. For maximum profitability, however, Telex had to get its substitute peripheral products on the market as soon as possible after IBM announced its original products. This made it desirable for Telex to determine the specifications and plans for new IBM products at an early date, preferably even before IBM announced its products to the public. Telex accomplished this feat largely by hiring IBM employees willing to trade in their consciences for a hefty bonus.

The first key figure to be lured to Telex was Jack James, systems requirement and business manager for IBM's General Systems Division, who had access to confidential data relating to IBM products under development and to IBM's forecast and financial information. Telex offered James a job as vice-presi-

dent in January 1970, and James, while still employed by IBM, provided Telex with advice on what products it should offer in the future; he also collected a "substantial quantity" of IBM planning data, then left to join Telex, armed with confidential information he had copied from various IBM internal documents. Using this information, he prepared a series of detailed memoranda that enabled Telex to revise its business and product plans so as to be more competitive with new products IBM was planning to market. Judge Christensen concluded that "James deliberately misappropriated IBM confidential information and made that information available to Telex."

Telex then launched what the judge described as "a practice of acquiring . . . confidential information and trade secrets through the hiring of IBM employees." In July 1970, Telex hired Howard Gruber, an engineer in charge of development work on IBM's unannounced advanced tape subsystem, code-named Aspen, by offering him a salary of \$35,000, a guaranteed bonus of \$5,000, and options on 2,500 shares of Telex stock—a compensation package that more than doubled Gruber's compensation at IBM. The investment paid off for Telex. Gruber designed a replacement version of Aspen even before IBM announced its new product, and Telex was able to make deliveries of its replacement model just two months after IBM began delivering its original version.

In November 1970, Telex hired John K. Clemens, IBM's engineering program manager for an advanced disk subsystem known as Merlin. (Anticipating industrial warfare, IBM applies military-like code names to its major development projects.) Telex offered Clemens a bonus that could reach \$500,000, if he performed well; a salary of \$40,000; and options for Telex stock having a market value of \$50,000. Clemens was also given \$500,000 in bonuses and \$300,000 in stock options to dangle before other potential recruits. He promptly hired eight other IBM engineers who had worked on the Merlin project.

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### Chemists Now Urge Total CBW Ban

In a split with the Nixon Administration and its own past policies, the 109,000-member American Chemical Society has called for an international ban on chemical and biological weapons, including herbicides and tear gas.

At its national meeting in Chicago a month ago, the ACS board of directors and the ACS Council endorsed "without qualification" the Geneva Protocol prohibiting the use of all chemical and biological weapons.

This represented a break with the Administration's position—previously endorsed by the ACS in 1970—that the Protocol should be signed by this country only if herbicides and tear gas were understood to be excluded.

According to Chicago press reports, ACS President Alan C. Nixon told reporters the society was influenced by the damage caused by extensive use of herbicides in Vietnam and by "police over-reaction" in the use of tear gas to quell anti-war demonstrations. He also suggested that members might now pressure the ACS to take action against companies that manufacture chemical and biological weapons.

The ACS has now come full circle. In 1926, when the Protocol was first presented to the US Senate for ratification, the ACS was one of the leading opponents of such an international agreement.

### In Print

Recent publications of more than routine interest:

*Annual Report of the National Advisory Committee on Oceans and Atmosphere*, resounds with distress over the Administration's budgetary cuts and alleged indifference in oceanic and atmospheric matters; supports Nixon's proposal to create a Department of Natural Resources (since rechristened Energy and Natural Resources), but the Committee says the Nixon plan reflects "an inadequate assessment of both the opportunities and problems of developing marine resources." (46 pages, 55 cents, US Government Printing Office, Washington, D.C. 20402.)

**ESPIONAGE** (Continued from page 6.)

But as it turned out, Telex never completed its disk subsystem. Instead, it sold its misappropriated knowledge to Control Data Corp., another IBM competitor.

The court decision cites many other instances in which Telex appropriated, or sought to appropriate, confidential IBM information. In one case, Telex obtained an IBM "source code" which can be used to design and test new products. It sold this code to Control Data. In another case, Telex, in trying to negotiate a contract with Hitachi, the leading Japanese electronics manufacturer, offered as an inducement that Telex would give Hitachi information on various unannounced IBM products.

This thievery was carried out with a lack of moral concern that rivals Watergate. All of the IBM employees who jumped to Telex had either signed statements that they would protect IBM's confidential information or had attended briefings before leaving IBM at which the importance of confidentiality was stressed. Few, if any, admitted that they had revealed trade secrets, and most claimed they had not. But the judge concluded that, while some former IBM employees tried to adhere to their pledges, "in numerous instances" IBM's trade secrets were revealed.

Telex executives, meanwhile, resorted to rationalizations and dissembling to justify what they were doing. They went through the motions of telling former IBM employees they were not expected to use trade secrets, while offering "performance" bonuses that could not possibly be earned without using IBM secrets. Telex officials also assured worried IBM executives that they were not hiring IBM employees to gain confidential information. But the game was given away by internal Telex documents which made it clear that Telex sought people with knowledge of IBM's future plans. "What we want is not skill *per se* but information," one memo acknowledged.

Judge Christensen concluded that Telex had launched "a massive and pervasive program designed to induce the breach of known obligations of IBM employees or former employees." He called the effort "an unacceptable program of industrial espionage." —PMB

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## Europeans Near Agreement On Joint Fusion Research

It looks as though a cooperative nuclear fusion research project is going to be the first major R&D project to grow out of Britain's entry into the Common Market. SGR has learned.

The venture, which is in the advanced stages of discussion, would also provide some rationale for the existence of the Market's atomic energy agency, Euratom, which, after an enthusiastic start 15 years ago, has lingered on in an anemic condition as each of the major member nations has pursued its own nuclear power program.

In anticipation of a joint fusion program, and with hopes of it being located in Britain, the United Kingdom Atomic Energy Authority has reversed the phased decline of its fusion-research facility at Culham, and is in the process of building up the staff from a present level of 165 professionals to about 200. The latter figure is independent of staff that would be involved in a multi-national program aimed at building and operating a Tokamak-type apparatus by 1978.

According to British officials, creation of a European design team has been informally agreed upon, and formal agreement for the project is expected shortly. Not yet settled, however, is the question of a site. Both the French and the West Germans have fusion research programs which are in the running. What the British have going for them is the longest experience in the field, plus the political necessity for demonstrating to the home folks that entry into the Market can produce some payoff beyond the huge price increases that followed the decision to join up with Europe.

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## Skeptic Shultz Now Says R&D Can Lick Energy Crisis

For the scientific community, the most under-celebrated bit of news over the past few weeks is that Treasury Secretary George P. Shultz has taken to boasting of America's technological prowess to "cool off the swagger" of the increasingly uppity middle-eastern oil-producing nations.

The significance of this embrace is that Shultz, who is all over the Executive landscape in one or another advisory capacity to Nixon, long ago acquired a reputation for skepticism regarding the economic value of federal R&D programs. He is said to have been the single most effective force for quietly filing away the multi-billion-dollar R&D proposals that emanated from Bill Magruder's "technological opportunities" studies toward the end of Nixon's first term. And last year, when he was still director of the Office of Management and Budget, he sermonized the General Accounting Office—in response to a study titled *Means for Increasing the Use of Defense Technology for Urgent Public Problems*—that "technology is likely to play a small role in the solution of most national problems." (SGR Vol. III, No. 3.) This view is said to bear some emotional link to his early post-war days at MIT, when, as one of the few social scientists on campus, he got a close-up look at some of the celebrated arrogance of the physics fraternity.

Well, every convert is welcome to the fold, and now we have reports of Shultz, at a trade meeting in Tokyo Sept. 13, telling the press that "with people from oil-producing countries, who are swaggering quite a bit these days, telling us how to run our energy policy and our foreign policy, the only thing that impresses them is our efforts to solve our own energy problems." To which he added that he had told his fellow conferees that the nation that built the atom bomb in four years and put a man on the moon in eight years certainly could develop means to fill its fuel tanks.

"When I say that," Shultz was quoted, "it tends to cool off the swagger a bit."

Having dealt so effectively with the swaggers, it might be useful for Shultz to explain how he intends to deal with the shivers that are widely expected to flourish this winter as a result of the Administration's muddled response to the energy crisis. A lot of research now planned or just getting started would be well underway if Shultz and Co. hadn't been wielding a fiscal meat axe over the past few years.

### Ex-NBS Chief Cool on New Advisory Setup

Gloomy assessments of the potential efficacy of the new federal science advisory setup continue to prevail.

The latest to be encountered by SGR comes from Lewis M. Branscomb, who left the directorship of the National Bureau of Standards last year to become Chief Scientist and a vice president of IBM.

"The real fault," Branscomb said in an interview, "is that the government was in the process of rationalizing its scientific and technological policies, and it might have succeeded if OST (White House Office of Science and Technology) had not been abolished." Under the last director of OST, Edward E. David, Jr., Branscomb said, "we were working out ways of balancing the government and industry roles, and academic responsibilities. With OST gone," he continued, "there just isn't a proper focal point for the job."

Branscomb spoke favorably of NSF Director H. Guyford Stever, who, under the title of Science Advisor, has inherited many of OST's responsibilities. "Stever can personally carry on the work," he said, "but the constituency of NSF is the academic community, which has many problems of its own. And NSF is not sensitive to business considerations."

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